



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------|------------------|
| 10/608,811 | 06/26/2003 | Eran Steinberg | FN-102D-US | 7949 |
| 72104 | 7550 | 05/13/2008 | | |
| FotoNation Patent Legal Dept. 3099 Orchard Drive San Jose, CA 95134 | | | EXAMINER SETH MANAV | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2624 | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 05/13/2008 PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/608,811

Applicant(s)

STEINBERG ET AL.

Examiner

MANAV SETH

Art Unit

2624

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-9, 16-20, 22-24 and 31-38 is/are pending in the application.
- 4a) Of the above claim(s) 31-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 16-20 and 22-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment received on January 11, 2008 has been entered in full.
2. Applicant's arguments with respect to rejected claims as presented in the amendment filed have been fully considered but are moot in view of the ground(s) of rejection(s) made below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 7-9, 16-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al, European Patent No. EP1128316A1, further in view of Suzuki et al, U.S. Patent No. 5,305,048, and further in view of Steinberg et al., U.S. Patent No. 6,151,073.

Regarding claim 1, Ray discloses within a digital acquisition device with a built in flash unit, a method of controlling the exposure of an acquired digital image using face detection in said acquired image (page 2, lines 44 – 50; page 4, lines 32-35; page 5, para. [0032], lines 54-58 through page 6, lines 1-8);

Ray further discloses identifying a plurality of groups of pixels (faces) that correspond to plurality of images of faces within said digitally acquired image (page 4, lines 32-35; page 5, para.

[0032], lines 54-58 through page 6, lines 1-8 – detection of multiple faces in an image where multiple faces corresponds to plurality of groups of pixels),

Ray further discloses determining corresponding image attributes to said groups of pixels (page 5, lines 49-53 – determining focus (sharpness), page 6, lines 1-8 determining illumination (exposure) which being the image attributes),

Ray further discloses said group of pixels of faces being given a certain weight based on a distance of said groups of pixels to the device ((page 5, lines 49-53 – focusing the image optimally for the preponderance (weight) of the faces in the scene, setting the optimal focus for a largest face in the scene, thus giving a certain weight- where focus is based on a distance of said groups of pixels to the device; page 6, lines 1-8 determining illumination (exposure)- **setting the image exposure optimally corresponding to the preponderance (weight) of the faces in the scene** based on the assessment of the **adequacy of the illumination of faces** in the scene, (if face were all at same distance from the device, there was no need to assess the adequacy of the illumination of the faces in the scene), where illumination of faces in the images measured is inherently a function of distance of faces to the device. The illumination (exposure) measured in the image is nothing but the amount of light received by the camera sensor and the amount of light received by the camera sensor is proportional to the light reflected by the objects faces at a certain distance),

Clearly in the claim, limitation “said group of pixels of faces being given a certain weight based on a distance of said groups of pixels to the device” is not linked with other parts of the claim, meaning, in the claim weighing the image portions (faces) based on the distance of said image portions to the device does not provide clear teachings that how such weighing is used for perfecting the exposure of the digital image. However, if such a weighing was linked to perfecting the exposure of the digital image, examiner here provides the reference Suzuki. Suzuki's reference is

directed to obtaining an optimal exposure in acquired image (col. 2, lines 20-28) and further teaches the use of weighting the image portions (group of pixels) based on a distance of image portions to the camera (focus) (col.3 lines 5-15) to obtain optimal exposure. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to combine the teachings of Ray and Suzuki because both references are directed to the same field of endeavor and Suzuki provides more explicit teachings of providing the proper optimal exposure with further advantages as cited in Suzuki (col. 8, lines 44-51).

Ray further discloses performing an analysis of said corresponding image attributes of said group of pixels and determining to activate said built-in flash unit based on said analysis (page 6, lines 1-8, determining illumination (exposure) which being the image attributes and then performing analysis on attributes to activate said built-in flash unit),

Ray further discloses that "If the illumination is inadequate, the flash control algorithm 84 will activate and control the flash unit" (page 6, lines 7-8) which clearly shows controlling the flash unit based on the analysis but do not explicitly teach this step in detail and therefore do not expressly teach determining an intensity of said built in flash unit. However, Steinberg which belongs to the same field of endeavor teaches determining an intensity of said built-in flash unit based on the said analysis of the image attributes (col. 3, lines 1-15). Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made to combine the teachings of Steinberg with that of Ray because both references are directed to the same field of endeavor for controlling the exposure by the built-in flash unit and Steinberg when combined with Ray would provide a technique for controlling flash exposure which would adaptively provide a optimum flash exposure that would adaptively conserve total flash energy with increased accuracy (See Steinberg, col. 3, lines 1-32).

Regarding claim 2, Ray discloses an initial step of calculating image attributes on an entire said acquired digital image and comparing said image attributes to said image attributes of said groups of pixels (page 6, lines 1-8). See Steinberg (col. 4, lines 55-68 through col. 7).

Regarding claim 3, the subject matter of claim 3 has been discussed in the rejection of claim 1, therefore, claim 3 has been similarly analyzed and rejected as per claim 1.

Regarding claim 4, Ray discloses exposure being calculated a function of one or more parameters including aperture, speed, gain, or relative sensitivity, or combination thereof (page 3, lines 56-57). See Steinberg for further information as applicant itself has agreed (specification, page 33, last few lines of last para.) to be taught by Steinberg.

Regarding claim 5, Ray discloses said group of pixels of faces being given a certain weight based on weight criteria, said weight based on relative sizes of said groups of pixels (page 5, lines 57-58; page 6, lines 1-8- largest face (size)). See Steinberg, (col. 2, lines 50-52; col.8, lines 19-56).

Regarding claims 8 and 9, Steinberg discloses performing a pre-flash based on said calculated flash intensity to determine whether said analysis is accurate (col. 2, lines 37-49; col. 3, lines 1-10) and further performing a second analysis based on said pre-flash (col. 3, lines 10-14).

Claims 16-20 and 22-24 have been similarly analyzed and rejected as per claims 1-5 and 7-9.

Election/Restrictions

5. Newly submitted claims 31-38 are directed to distinct species/invention that is independent or distinct from the species/invention originally claimed for the following reasons:

Species I. Claims 1-5, 7-9, 16-20 and 22-24 describe the originally presented invention which is directed to a method of perfecting the exposure of an acquired digital image using face detection, which further requires weighing the groups of pixels of faces based on a distance of said groups of pixels to the device,

Species II. The newly added claims 31-38 are directed to a method of perfecting the exposure of an acquired digital image using face detection, which further requires **face detection using rectangular features**.

The species are independent or distinct because, for example, species II requires “face detection employing rectangular features”, and this is not required by species I. The species are independent or distinct because claims to the different species recite mutually exclusive characteristics of such species. In addition, these species are not obvious variants of each other on the current record. There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries; and/or the prior art applicable to one species would not likely be applicable to another species. In this case species II requires further search in the class 382/181 for a rectangular pattern.

Since applicant has received an action on the merits for the originally presented invention/species, this invention/species has been constructively elected by original presentation for

prosecution on the merits. Accordingly, claims 31-38 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Bhavesh M Mehta/

Supervisory Patent Examiner, Art Unit 2624

Application/Control Number: 10/608,811

Page 8

Art Unit: 2624

/Manav Seth/

Examiner, Art Unit 2624

May 7, 2008